**DERWENT-ACC-NO:** 

1975-81662W

**DERWENT-WEEK:** 

197550

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TITLE:

Silicon nitride protective coating prodn on semiconductor - by thermal decompsn of alkyl- or

aryl-substd. silicon-nitrogen cpd

PATENT-ASSIGNEE: SIEMENS AG[SIEI]

PRIORITY-DATA: 1966DE-1544287 (April 29, 1966)

**PATENT-FAMILY:** 

**PUB-NO** 

**PUB-DATE** 

LANGUAGE

PAGES

MAIN-IPC

DE 1544287 B

**December 4, 1975** 

N/A

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N/A

INT-CL (IPC): B01J017/32

ABSTRACTED-PUB-NO: DE 1544287B

**BASIC-ABSTRACT:** 

In the prodn. of a Si3N4 protective coating on the surface of a semiconductor crystal, esp. of Si, by thermal deposition from a suitable reaction gas, the active constituent of the gas consists of alkyl- or aryl-aminosilanes, -amino-alkylsilanes or -silazanes or cyclic alkyl- or aryl-substd. Si-N cpds. The deposition temp. can be much lower than for the reaction of SiCl4 or SiH4 with NH3 and the process avoids the formation of intermediates contg. Si-H groupings, which can impair the properties of the coating.

TITLE-TERMS: SILICON NITRIDE PROTECT COATING PRODUCE SEMICONDUCTOR THERMAL ALKYL ARYL SUBSTITUTE SILICON NITROGEN COMPOUND

**DERWENT-CLASS: L03 U11** 

CPI-CODES: L03-D03D;

BUNDESREPUBLIK DEUTSCHLAND

B 01 j

DEUTSCHES



Deutsche Ki.: 12 g, 17/32 48 b, 11/08

Offenlegungsschrift 1544287

Aktenzeichen:

P 15 44 287.2 (8 103522)

Anmeldetag:

Int. Cl.:

29. April 1966

Offenlegungstag: 10. Juli 1969

	Ausstellungspriorität:	_
<b>8</b> ):	Unionspriorität	
9	Datum:	<del>_</del>
9	Land:	<del></del>
<b>9</b>	Aktenzeichen:	<del>-</del>
8	Bezeichnung:	Verfahren zum Herstellen einer Schutzschicht aus einer Silizium- oder Germaniumstickstoff-Verbindung an der Oberfläche eines Halbleiterkristalls
<b>1</b>	Zusatz zu:	
<b>9</b>	Ausscheidung aus:	
<b>D</b> .	Anmelder:	Siemens AG, Berlin und München, 8000 München
•	Vertreter:	· <del>-</del>
3	Als Briinder benannt:	Pammer, Dr. DiplChem. Erich; Panholzer, DrChem. Horst; 8000 München

Benachrichtigung gemäß Art. 7 § 1 Abs. 2 Nr. 1 d. Ges. v. 4. 9. 1967 (BGBl. I S. 960): 25. 4. 1968

1 Publication number:

0 418 468 A1

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## **EUROPEAN PATENT APPLICATION**

- 2 Application number: 90109000.1
- ② Date of filing: 12.05.90

(ii) Int. Cl.<sup>5</sup>. **H01L 21/314**, C23C 16/34, C23C 16/40

- Priority: 20.09.89 US 412250
- Date of publication of application: 27.03.91 Bulletin 91/13
- Designated Contracting States:
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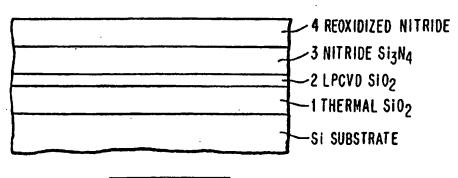
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  IBM Deutschland GmbH Patentwesen und
  Urheberrecht Schönaicher Strasse 220
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- Ultra-thin dielectric for microelectronics applications.
- ② A system for fabricating an ultra-thin composite dielectric, usable for the capacitor in DRAM and in other integrated circuits, involving the deposition, a LPCVD tube, of a nitride (3) in situ on a very thin LPCVD oxide (2). By re-oxidizing the nitride (3) or depositing a LPCVD oxide layer (4, 4) in situ there-

on, a composite ONO dielectric, having very low defect density and good overall electric properties, of less than 10 nm in thickness and as low as 4.5 nm, may be formed.

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FIG. 1



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